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PROCEEDINGS

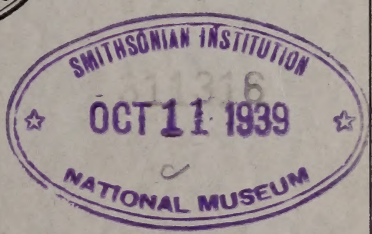
OF THE

Royal Zoological Society

OF

New South Wales

FOR THE YEAR
1938-9.



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ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

(Established 1879.)

Registered under the Companies Act, 1899 (1917).

PATRONS

His Excellency the Governor of New South Wales, The Lord Wakehurst, K.C.M.G.

Sir Philip Woolcott Game, G.B.E., K.C.B., D.S.O.

COUNCIL, 1939-40.

President: Keith A. Hindwood, C.F.A.O.U.

Vice-Presidents: A. F. Basset Hull, M.B.E., F.R.Z.S.; Albert Littlejohn; Noel L. Roberts; and Gilbert P. Whitley, F.R.Z.S.

Honorary Secretary: Tom Iredale.

Honorary Treasurer: Phillip Shipway

Honorary Librarian: A. S. Le Souef, C.M.Z.S.

Members: E. J. Bryce, F.R.G.S.; Neville W. Cayley, F.R.Z.S.; Aubrey Halloran, B.A., LL.B.; Frank Marshall, C.M.G., D.D.S.; Garnet Halloran, B.Sc., M.D., F.R.A.C.S., F.R.C.S. (Ed.); Charles F. Laseron; Michael S. R. Sharland; Theodore Cleveland Roughley, B.Sc.; J. R. Wallace; and Emil H. Zeck.

Assistant Honorary Secretary: Betty French.

Honorary Auditor: R. J. Stiffe, A.C.A. (Aust.).

OFFICERS OF SECTIONS.

Avicultural Section.

Chairman: A. H. Brain.

Hon. Secretary: John D. Whaling.

Budgerigar Section.

Chairman: R. J. Murray.

Hon. Secretary: F. Brennan.

Marine Zoological Section.

Chairman: G. P. Whitley.

Hon. Secretary: W. E. Smythe.

Ornithological Section.

Chairman: M. S. R. Sharland.

Hon. Secretary: T. A. Everitt.

ERRATUM: *Pp.* 24-26.
In reading, page 24 should follow
pages 25 and 26.

ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

The Fifty-ninth Annual General Meeting of the Society was held at Taronga Zoological Park, Mosman, on Saturday, 29th July, 1939, at 3 p.m. 161 members and visitors were present. The Honorary Secretary, Mr. Tom Iredale, read the:—

FIFTY-NINTH ANNUAL REPORT.

Membership.—On the 30th June, 1939, there were 529 members on the register, the ordinary membership of the Society being the highest on record, exceeding the allotted number of 350. This excellent result was due to the enthusiasm of our esteemed President, who organised a drive for membership, and with the co-operation of the Council, achieved his aim as a memento of the sixtieth anniversary of the foundation of this Society. Last year at the same date the ordinary membership (including life members) stood at 310, the increase of 40 being an achievement of which the Council is very proud. Associate benefactors still stand at 3, life members 28, honorary members 8, ordinary members 315, honorary associates 2, life associates 24, and associates 149.

Members to the number of 9 passed away during the year, while 7 resigned, mainly from residential reasons. Unfortunately the names of 32 had to be removed from the register in terms of Article 9. Four associates converted to full membership. Thus the net increase has been 36.

It is a matter of pride to record such an excellent state of affairs, a pride in which the members of the Society can well share. It is hoped that all members will co-operate to maintain and advance the aims of the Society.

The Council.—The meetings of the Council numbered eleven, the average attendance being 12. Mr. Bryce was on leave of absence for part of the year, visiting other countries and maintaining the prestige of the Society abroad. Mr. Clive W. Firth, who was only comparatively recently elected, found that he was unable to do justice to the Council, so resigned and Mr. J. R. Wallace, a valued supporter of the Society, was elected in his stead.

Honour to Member.—The honour of Commander of the Order of the British Empire (C.B.E.) was conferred by His Majesty the King on Mr. Gregory M. Mathews, the famous Australian Ornithologist and author of the monumental "Birds of Australia". During his many years of ornithological work he accumulated a wonderful library dealing with the Australian Avifauna, including many rare books. These he presented to the Commonwealth of Australia, and they will be housed at Canberra for the use of Australian ornithologists. Mr. Mathews will arrive in Australia in December, in order to supervise the arrangement of the Library and as he is a Fellow and Honorary Associate of this Society an opportunity to meet his fellow members will be arranged in due course.

Deaths.—By the death of our Patron, Sir Philip Street, K.C.M.G., this Society lost not only one of its Patrons, but also a member of many years standing who had on several occasions taken an active part in the Society's meetings.

Mr. R. H. Levien, a member for over fifty years, Mrs. Hordern, a life member and daughter of the late H. L. White, of Belltrees, Scone,

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and Mr. F. A. Coghlan, formerly Auditor General, also died during the year.

Patron.—Consequent upon the death of our resident Patron, Sir Philip Street, His Excellency the Governor the Lord Wakehurst was invited to bestow his patronage upon the Society, and to this he graciously assented. He later showed his interest in our Society by attending our Anniversary Meeting.

Finances.—As anticipated last year the finances have once again assumed their normal state, the balance sheet showing a satisfactory result of the year's work.

Publications.—The volume of Proceedings for 1937-38 was issued in August as usual, and part II. of the 9th volume of The Australian Zoologist" appeared on 30th November, 1938.

Mr. G. P. Whitley is now engaged upon the first part of the proposed new Handbook to the Fishes of Australia and is at present in Western Australia working out some of the problems which cannot be solved at this side of the Continent. The third edition of the late Mr. McCulloch's "Fishes and Fish-like Animals of New South Wales", with appendix by Mr. G. P. Whitley, is now almost sold out.

Handbook Fund.—This fund has been increased a little, but the publication of a Handbook to Fishes will make a severe drain upon its resources, so that we must still maintain our efforts to increase it.

Sections.—The Sections this year have functioned regularly and while there has been no great increase in attendances there has been continued enthusiasm of the members present, so that the meetings have always been really live affairs. Reports covering the efforts of the Sections are incorporated in the Proceedings with syllabuses of the meetings to be held during the coming year. Attention is drawn to this matter, as during the year complaints have been made by ordinary Members to the effect that they were ignorant of the procedure of the Society. Upon being referred to this publication their excuse was that they had not read it. As the Proceedings are forwarded to every member such complaint was inexcusable and indicated a certain lack of interest in the doings of their own Society.

These sectional meetings are attended by members interested in the special subjects named, but there has been legitimate complaint that no open meetings were held for the general public. When such has been offered in the past there has been little support of the complainants, the majority of the attendance being of members regularly attending sectional meetings. However, the Council has the matter again in hand and the response to the Anniversary Meeting suggests that this may be the opportune time to re-open the subject.

Diploma.—On the recommendation of the Avicultural Section, the Society's Diploma was presented to Mr. Eric C. Steeles for his success in breeding the Senegal Waxbill.

Anniversary Meeting.—As the Society completed sixty years of work on the 24th March a memorial meeting was decided upon, and this was held on 31st March, 1939, the nearest date available.

Our Patron, His Excellency the Lord Wakehurst, honoured us with his presence and nearly three hundred of our members and friends attended. The programme included coloured and ordinary films of Taronga Park, the Barrier Reef, Birds of the Moree Watercourse, etc. The President gave a brief history of the Society's establishment and achievements during the sixty years of its existence.

Preservation of the Tasmanian Tiger.—Consequent upon the information reported in our last Proceedings, another search was made in the wilds of Western Tasmania for evidence of the existence of this almost extinct Marsupial. The expedition was fitted out by the Tasmanian Animals and Birds' Protection Board, and as a guest, Mr. M. S. R. Sharland accompanied it. A full account will be published in the Proceedings, from which it will be seen that new footprints were observed more than once indicating that more than one individual still survives in the locality searched. Thanks have been transmitted to the

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Tasmanian Board for its generosity in allowing Mr. M. S. R. Sharland the opportunity of first hand knowledge of the position. Apparently Mr. Sharland upheld the traditions of the Society as the Tasmanian Board has renewed its invitation to their next research expedition. It is a matter of regret that no animals were seen but this is mainly due to the nocturnal habits of the marsupial.

Taronga Park Trust.—The Trustees continue to provide facilities for members of this Society in accordance with the original agreement under which our members have free admission to the Park and Aquarium. The Trust is now issuing season tickets but members of this Society have still additional advantages in the form of extra tickets and the Society's publications, and the right to attend about 48 meetings per annum.

Faunal Reserves.—After a lull, the matter of faunal reserves has again been taken up by the State Government in connection with the National Park Trust project, and it is hoped that some concrete result will be achieved during the coming year. The project of the National Park Trust is the one outlined by this Society at a meeting called last year, and it will be a matter for congratulation to this Society if it be successfully carried out.

Fauna Conference.—As reported last year a Conference was held and certain recommendations adopted, the next Conference being delegated to Canberra, the meeting to be held in September, 1938. The meeting, however, did not take place, and none has yet been held, although attempts have been made to revive the matter. It is a matter of regret that there is so little enthusiasm in official quarters over such an important matter.

State Faunal Advisory Board.—As the State Advisory Committee re Exportation of Fauna has not been functioning actively this Society has submitted to the Chief Secretary certain suggestions for re-constitution of the Committee. The matter is still under consideration.

Gouldian Letters.—One hundred years ago, John Gould, the Ornithologist, visited Australia and later issued the Birds of Australia, a publication which advertised Australia better than any other single act save the discovery of gold. One of our members, Mr. A. H. Chisholm, a former member of our Council, visited England, and had the good fortune to discover a mass of valuable letters and the original diary of John Gilbert, who accompanied Leichhardt on his first expedition. Gilbert was unfortunately killed, but the diary has been now recovered after almost a century's time. It contains much interesting matter about Leichhardt, and is here mentioned as Mr. Chisholm with praiseworthy generosity has presented this invaluable material to the Mitchell Library of this City.

The Honorary Treasurer, Mr. Phillip Shipway, presented the Balance Sheet. (See Page 5).

The Hon. Sir Archibald Howie, M.L.C., President of the Sydney Chamber of Commerce, moving the adoption of the report and balance sheet, said that for all his life he had been engaged in commerce and industry, where, he said, people did not do anything unless there "was something in it". It was a change, therefore, for him to be associated with a body with members working enthusiastically and keenly in the interests of science, and with no thought of profit. In certain directions, however, he himself had taken an interest in science, and this particularly in relation to his hobby of breeding animals. What he had done, on his farm, could be done by anybody engaged on the land if they went into it thoroughly and adopted a scientific basis.

He had been taken round the Zoo that day by Colonel Spain and was impressed with the way the animals lived and their comfortable quarters, and he had promised Colonel Spain that he would present one of his Shetland ponies to the Zoo. (Applause).

The Zoo was concerned with captive animals from many parts of the world, but the Society was concerned with native animals, he

added. And he considered that in the direction of conserving the native animals, the Society was performing valuable work. He hoped that it would be able to bring influence to bear on the authorities in the interests of these animals, which, in the past, had been ruthlessly destroyed. In his own district he had set an example by having his property gazetted a bird sanctuary, and though birds were scarce there ten years ago when he first took it up, to-day they were drifting back to the area where they knew they were protected.

"I do commend the work your Society is doing", Sir Archibald Howie added. "You are dealing with matters of public importance, and I hope that you will get the support that your efforts merit, though unfortunately very little appreciation is given to science in these modern times".

Mr. E. J. Bryce, F.R.G.S., in seconding the motion, referred to his recent visit to Rouen, France, where he represented the Society at the Ninth International Ornithological Congress, where he found that the Society and its aims were well known.

The following members of Council, retiring under Article 23, were re-elected:—Messrs. E. J. Bryce, K. A. Hindwood, Tom Iredale, A. S. Le Souef, J. R. Wallace and Dr. Garnet Halloran.

OFFICERS FOR 1939-40.

At a meeting of Council, held on August 2, 1939, the following were elected officers:—President: Mr. Keith A. Hindwood, C.F.A.O.U.; Vice-Presidents: Messrs. Basset Hull, A. Littlejohn, Noel L. Roberts and G. P. Whitley; Honorary Secretary: Mr. Tom Iredale; Honorary Treasurer: Mr. Phillip Shipway; Honorary Librarian: Mr. A. S. Le Souef; Honorary Editor: Mr. Basset Hull; Honorary Auditor: Mr. R. J. Stiffe; Honorary Assistant Secretary: Miss Betty French.

BALANCE SHEET AS AT 30th JUNE, 1939.

ACCUMULATED FUNDS.	£ s. d.	£ s. d.
General Account—		
Working Account—		
Balance at 30th June, 1938 — Debit ..	1 6 6	
Add Excess of Expenditure over Income for the year ..	39 5 4	
Debit	40 11 10	
Funds Invested	714 7 10	
		673 16 0
Handbook Fund Account—		
Working Account—		
Balance at 30th June, 1938	82 9 10	
Add Excess of Income over Expenditure for the year ..	82 4 6	
	164 14 4	
Funds Invested	2,010 0 0	
		2,174 14 4
		£2,848 10 4

ASSETS.	£ s. d.	£ s. d.
General Account Investments—		
Office and Lecture room Furniture and equipment at valuation, plus additions	214 7 10	
Library books, etc., at valuation ..	500 0 0	
		714 7 10
Handbook Fund Account Investments—		
Australian Consolidated Inscribed Stock (Face Value)	660 0 0	
Australian Consolidated Treasury Bonds (Face Value)	1,250 0 0	
Metropolitan Water Board Inscribed Stock (Face Value)	100 0 0	
		2,010 0 0
Including:—		
Albert Littlejohn Endowment	100 0 0	
Hume Barbour Endowment	106 0 0	
Walter & E. Hall Endowment	175 0 0	
Cash at Bank and on Hand—		
Commonwealth Savings Bank:—		
General Account	84 5 2	
Handbook Fund Account	39 16 10	
Cash on Hand	0 0 6	
		124 2 6
		£2,848 10 4

Auditor's Report to the Members of the Royal Zoological Society of New South Wales.

I hereby report that I have audited the books and accounts of the Royal Zoological Society of New South Wales for the year ended 30th June, 1939, and have obtained all the information and explanations I have required, and in my opinion, the above Balance Sheet exhibits a true and correct view of the state of the Society's affairs as at 30th June, 1939, according to the best of my information and the explanations given to me and as shown by the books of the Society.

I have examined the register of members and other records which the Society is required to keep by law or by its Articles, and am of opinion that such records have been properly kept.

(Sgd.) ROBT. J. STIFFE, F.C.A. (AUST.),
Hon. Auditor.

Sydney, 24th July, 1939.

A. F. BASSET HULL, President. T. C. ROUGHLEY, Vice-President.
PHILLIP SHIPWAY, Honorary Treasurer.

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1939.

GENERAL ACCOUNT.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Publication "Australian Zoologist", Vol. 9, Part 2 and reprints	117 9 3		By **Subscriptions**:— Annual	304 17 4	
,, Publication Annual Report — Proceedings and Reprints .	37 6 0		Life ,, ...	10 0 0	
,, Office Rent .	162 10 0		,, Sales "Australian Zoologist" .	26 8 8	
,, Office Printing and Stationery, including annual passes, tickets and Diplomas	22 1 2		,, Rent — Subletting Offices .	48 2 6	
,, Rent — Post Office Box ..	1 0 0		,, Bank Exchange and Postage ..	1 1 11	
,, Annual Meeting Expenses .	22 9 0		,, Telephone	7 8 4	
,, Telephone . ..	25 16 7		,, Capitation Fee	0 3 6	
,, Electricity ..	8 19 9		,, Sundry Receipts	0 17 6	
,, Insurance . ..	2 12 0		,, Savings Bank Interest	2 9 11	
,, Stamp Duty, Bank charges and Registration Fee	1 5 0				401 9 8
,, Sundry Petty Expenses . ..	24 12 6		,, **Donations**:— Albert Littlejohn, Esq. ..	2 3 6	
,, Capitation and Affiliation Fees	1 18 6		Sir Kelso King	1 1 0	
,, Purchase of Furniture, etc.	5 9 9		National Park Cabin Fund .	3 6 0	
,, Advance to Tasmanian Tiger Expedition	10 0 0		E. J. Bryce, Esq.	4 4 0	
,, Lift Attendance	8 0 0				10 14 6
		451 9 6	,, **Balance** — Excess of Expenditure over Income for the year		39 5 4
		£451 9 6			£451 9 6

HANDBOOK FUND ACCOUNT.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Premium on purchase of Commonwealth Bonds	3 5 0		By Handbook Sales	10 10 7	
,, **Balance**—Excess of Income over Expenditure for the year	82 4 6		,, Savings Bank Interest	0 9 0	
			Interest on Investments	74 9 11	
					85 9 6
		£85 9 6			£85 9 6

Presidential Address

AUSTRALIAN FAUNA: THE NEED FOR UNIFORM CONTROL.

By A. F. Basset Hull, M.B.E., F.R.Z.S.

Ten years ago, in my presidential address to the members of this Society, I described our native fauna as "a wasted asset". To-day, the description is still apt, and the asset is still wasting. Nothing practical has been done; no attempt has been made to check the waste, and no steps have been taken in the direction advocated by me in 1929, viz., to adopt a system of uniform control. It is true that many contributions have been made to the plea for more effective preservation of the fauna, notably by Professor W. J. Dakin (Sydney Morning Herald, 26.12.38) who urged the establishment of faunal reserves similar to those of the United States, South Africa and other countries, but beyond putting the case forcibly nothing was added to the arguments I put forward in 1929. To-day the same laws exist and the same methods of administration are followed. No real effort has been made to render the various State laws more uniform, and no attempt has been made to treat the subject from an economic standpoint.

The whole story of our attitude towards our unique fauna has been marked by systems of savage slaughter alternating with periods of sickly sentimentalism. During the former, which practically ruled until the beginning of the present century, the birds and animals were regarded as fair game for any person who had a gun or a trap. Protection was not seriously legislated for until 1901, and the Crown ownership of wild life was not asserted until 1918. The alternation of open and close seasons for both game birds and fur-bearing animals has not tended to preserve certain species which are already threatened with extinction, and the system has largely resulted in enabling illicit trappers to gather skins for realisation when an open season is declared.

The lack of uniformity in the State laws again plays into the hands of the illicit trappers, who quietly slip protected skins from one State to an adjoining State where there is an open season. This applies to a marked degree also in the case of birds. Of the 700 species of Australian birds no less than 80 are wholly or partly protected in some States and unprotected in one or more of the other States. It is therefore possible for a trapper to collect protected species in say, New South Wales, take them by car or aeroplane, to Queensland, where they are not protected, and there obtain a permit to export them, as Queensland birds. I am in a position to assert that this practice is rife at the present day, and owing to the operation of Sec. 92 of the Commonwealth Constitution Act, nothing can be done to stop the practice—interstate trade is absolutely free.

In the case of furs, it is not a far cry back to the time when an open season for the Koala was declared in Queensland. Those who knew the fur market openly asserted that a large proportion of the skins sold during that open season had been illicitly taken during the previous close season, while many came across the border from New South Wales where the Koala was still protected.

In describing a close protection period as one of sickly sentimentalism, I refer to the sudden ban upon all keeping of protected animals in captivity. Two notable instances may be cited. Master Cayley found an embryo possum in its dead mother's pouch. With tender care, he fed it and reared it almost to maturity as a pet. He was

interviewed by police officers, and as a gracious concession he was allowed to keep it until it was able to fend for itself, then it was to be handed over to Taronga Park. In another case, Miss Florence Irby took an embryo squirrel from its dead mother's pouch. With an eye-dropper she fed it every two hours on diluted condensed milk until it reached maturity. As a pet it lived in her house for several years. In her case, a special permit to retain it was granted after searching inquiry.

It may be news to some of my hearers, but either to possess a feather of a protected bird, or to disturb one in the bush would constitute an offence punishable by a heavy fine under the Act. These are the extremes of "protection", and the onus of proof that the bird's feather was lawfully obtained before 1918 or that the "disturbance" was not wilful rests upon the person charged with the offence.

Recently I visited several towns in Queensland and saw examples of successful rearing of native animals in captivity. At Lone Pine near Brisbane, Mr. C. A. M. Reid has a small zoological garden, and the happy and healthy condition of his Koalas, Kangaroos and other animals is a tribute to his care. At Townsville, Mr. St. John Robinson has made two artificial lagoons covering some hundreds of acres where thousands of pied geese, ducks, and other birds breed and enjoy perfect liberty with protection. He also has a number of Koalas, while both he and Mr. Reid are successfully experimenting with artificial food for this animal. In this State, certain persons claim that the Koala will not survive under such conditions, and that it "never drinks". Mr. Faulkner who kept a female Koala for sixteen years in captivity, stated that it drank ½ a pint of cow's milk every day, and added half a dozen peppermint lozenges to its occasional gum leaf diet. Mrs. Edith Coleman, a Victorian naturalist, described the Koalas under her supervision as coming down regularly to drink water from a dish placed at the foot of their trees.

At Cairns, I saw possums, cuscus and wallabies living in captivity and in loving harmony with a cocker spaniel in a spacious yard with large cages, owned by Mr. Balfe.

Several parrots, notably the Bourke, Turquoisine, Scarlet-chested and Beautiful, was considered as on the verge of extinction, and amongst aviculturists very high prices, up to £50 a pair, were paid for specimens. In South Australia particularly permission to keep some of these birds in captivity was granted, and to-day a pair of Bourke's can be purchased for 15/-, and other species at correspondingly reduced figures.

These few instances of many that I could cite, are illustrative of the necessity for granting greater freedom to persons able and willing to experiment on breeding and artificial feeding of our native fauna in captivity, or under conditions of partial freedom.

Further in support of my claim that the economic side is wholly neglected by the authorities, I could point out the wastage that goes on when an open season is proclaimed either for a whole State or for some restricted locality. Possums and kangaroos are killed, trapped or poisoned (although this is illegal, it is still done) without any regard to selection or the preservation of females or immature young. If permission to take or kill were restricted to licensed trappers, it would be to their own interest to attend to such matters. Better still would be the establishment of large faunal reserves, under the control of paid officers, where artificial feeding and careful selection of fully matured and furred animals could be carried out under expert supervision.

Possums can produce as many as four young ones at a time, but rarely more than two are found in a pouch or nest. Kangaroos and wallabies can produce two at a birth, although instances of more than one are extremely rare. Increased production would follow, as we know with our domestic birds and animals, under the stimulus of freedom from the attacks of natural enemies and a full supply of food. In the faunal reserves, properly regulated experiments could be carried out in these practical and economic directions, as well as scientific observations of a less practical but no less important nature.

I am quite prepared to hear some sheep or cattle men say "What is the good of breeding or protecting kangaroos, which only eat out the feed wanted for our beasts.?" The answer to this question is that

no exact knowledge is available as to the relative quantity of feed eaten by a sheep and a kangaroo. The present relative value of the two animals is undoubtedly in favour of the sheep, but while we have brought it to its present productive state by over a century of careful breeding we do not know the possibilities of a kangaroo under similar circumstances. Estimates of the relative amount of feed required by a sheep and a kangaroo have been published, even up to the alarming comparison that one kangaroo's feed would suffice for ten sheep. Recently a semi-official estimate placed it at 1 Kangaroo = 5 Sheep. I have before me a letter from a grazier who has lived for many years in the Cooma district. He says:

"When I first came here to live (16 years ago) I brought a few pet kangaroos with me, kept them in a three (3 acre) paddock, until eventually there were 24 in the paddock. They could not eat all the grass on the 3 acres, put a draught horse in to help eat it down. It is a good piece of ground that would probably keep 9 or 10 sheep. I would say $2\frac{1}{2}$ to 3 kangaroos would eat as much as one (1) sheep.

"I let the kangaroos out six or seven years ago, a few go outside my property and are destroyed, but there are a fair number here. They have never broken a wire or damaged a fence in any way".

Here is a concrete and four square estimate based upon actual experience, and I would place more credence upon such than upon the guesswork of one whose airy estimate is magnified by his hatred of the unfortunate kangaroo. Admittedly both kangaroos and wallabies do damage to fences and crops in addition to the damage done by eating the herbage. There are practical remedies which can be adopted against such damage.

I have touched upon some of the subjects in relation to our native fauna which are capable of experimentation. It remains to discuss the means for carrying out such experiments.

Obviously the existence of six separate States, five of which have no natural barriers on their boundaries, and all of which are not in agreement as to the species to be protected and the time of protection, tends to render the position almost hopeless. On the other hand, if the control of all the native fauna were vested in the Commonwealth, some practical solution of the difficulty would not be far to seek. "In the multitude of counsellors there is safety" says the scriptural proverb, but there is also a tremendous amount of differing opinion. The selection of a few well-qualified men of scientific and economic attainment under the direction of one Government would not only reduce overhead expenses to a minimum, but would result in more speedy and satisfactory administration of the law.

Further, only a Government like that of the Commonwealth could meet the cost of establishing and staffing the requisite reserves. As the Commonwealth already exclusively controls the question of export and import of fauna, it could most effectively impose a duty upon each bird or fur skin exported or imported, and thus raise a fund from which administrative expenses could be met.

Finally, let me refer to the specifications required in the case of "National Parks and Reserves" in contradistinction to such areas as the State National, Taronga, and Koala Parks, all of which are primarily for the amusement and entertainment of the people, and are totally unsuited for scientific or economic experimentation.

"The Conference for the Protection of the Fauna and Flora in Africa" which met in London in 1933, adopted a definition of the words "National Park".

For the purpose of the present Convention: (1) The expression "National Park" shall denote an area (a) placed under public control, the boundaries of which shall not be altered or any portion be capable of alienation except by the competent legislative authority, (b) set aside for the propagation, protection and preservation of wild animal life and wild vegetation, and for the preservation of objects of aesthetic, geological, prehistoric, historical, archaeological or other scientific interest, for the benefit, advantage and enjoyment of the general public, (c) in which the hunting, killing or capturing of fauna and the destruction or collection of flora is prohibited except by or under the direction or control of the park authorities.

In accordance with the above provisions, facilities shall, as far as possible, be given to the general public for observing the fauna and flora in National Parks.

The following is the definition approved by the same Conference for the "Strict Natural Reserve": II. The term "strict natural reserve" shall denote an area placed under public control, throughout which any form of hunting or fishing, any undertaking connected with forestry, agriculture, or mining, any excavations or prospecting, drilling, levelling of the ground, or construction, any work involving the alteration of the configuration of the soil or the character of the vegetation, any act likely to harm or disturb the fauna and flora, and the introduction of any species of fauna and flora, whether indigenous or imported, wild or domesticated, shall be strictly forbidden; which it will be forbidden to enter, traverse, or camp in without a special written permit from the competent authorities; and in which scientific investigations may only be undertaken by permission of those authorities".

Finally, to sum up:—

(1) Consistent and effective treatment of the Australian fauna can only be secured by control under one administration—that of the Commonwealth.

(2) Effective preservation and observation for economic study can only be secured by scientific observation in reserves closed against access by the public.

(3) Finance for effective control, policing of reserves and payment of scientific staff can best be obtained by an export duty on birds, animals, skins or plumage and only the Commonwealth can impose such a duty.

(4) Under uniform control, the present discrimination between the attitude of States to individuals in the matter of keeping birds and animals in captivity would disappear.

(5) For the purpose of establishing the necessary Faunal Reserves, the States should be prepared to cede or lease to the Commonwealth sufficiently large areas in (say) three of the great faunal regions of Australia, viz.: South-eastern (Victoria and New South Wales), North-eastern (North Queensland) and North-western (West. Australia).

The Premier of New South Wales, the Hon. B. S. B. Stevens, and Mr. E. S. Spooner have publicly advocated the granting of greater powers to the Commonwealth Government, and several Federal members have also expressed similar views. If the control of Native Fauna be placed as one of the subjects for a referendum and adopted, the future of our Birds and Animals should be provided for.

NOTES FROM THE MONARO DISTRICT.

Mr. Amos E. Williams, of Cooma, writes:—"Did you ever hear of kangaroos or wallabies having twins? I once shot a kangaroo with twins, also a wallaby. I do not think it would be possible for them both to be reared".

Mr. A. W. Bootes, of Sutton, near Cooma, writes: "The wild duck and plover here have increased from half a dozen or so to hundreds. They have cleaned up all the fluke snails, and I do not drench or inoculate at all, although my neighbours both above and below me on the Yass River have both fluke and black disease. It is a pity that all wild life could not be protected all the year round; the birds would then solve a great many of our troubles".

REPORTS OF SECTIONS.

AVICULTURAL SECTION.

Annual Report.

In submitting the annual report of the Avicultural Section for 1938-39 it is desired in the first place to record the exceptionally interesting series of illustrated lectures which were given, including the following:—

Mr. W. A. Goodacre, Chief Instructor in the Apicultural Branch of the Department of Agriculture, who dealt with "Bee Culture".

Mr. Roy Cooper, Secretary of the Ornithological, Section who gave us a most interesting address on "Colour in Birds".

A lecture on "Bird Parasites" was given by Mr. K. A. Hindwood.

In October last Mr. Neville Cayley discussed field and avicultural knowledge of finches, and in the following month

Mr. Jack Murray gave a most interesting account of well known aviaries in other States dealing particularly with Mr. Simon Harvey's world famous buildings in Adelaide.

Mr. M. S. R. Sharland, Chairman of the Ornithological Section, lectured at the January meeting when our members were fortunate in seeing some of the finest slides of Lyre Birds which have been made.

The year concluded with three very interesting addresses by Mr. Iredale, Mr. le Souef and Mr. Fletcher.

Members of the Section must count themselves fortunate in having had the opportunity of hearing this series of lectures from speakers who had a thorough understanding of their respective subjects and who willingly made their services available.

A successful table show was held in December when a number of interesting birds were exhibited by members; Mr. Hargreaves' Lazuli Bunting and his Firetail finch were greatly admired and the incoming committee will consider the advisability of holding similar shows during the forthcoming year.

During the year the awards Committee recommended to Council that the award for notable achievements for the year ended on the 30th June, 1938, should be made to Mr. Eric Steeles for the breeding of the Senegal Waxbills and Council has made this award. Mr. Steeles is to be congratulated on his success.

Attendance at the Meetings has remained at about the same level as the previous year, although during the period a number of new members have been nominated; possibly this may result in an improved attendance during the following year.

The officers of the Section wish to express their thanks to those who have assisted throughout the year.

A. H. BRAIN,
Chairman.

L. E. DEANE,
Hon. Secretary.

BUDGERIGAR SECTION.

Annual Report, 1938-39.

The year just concluded has seen a departure from the usual routine in the conduct of the Section, inasmuch, as the lectures of past years have been dispensed with and the general business reduced to a minimum.

To bring the Section closer to the object for which is was formed —the advancement and improvement of the Budgerigar—a series of Table Shows was embodied in the syllabus for the year. These Table Shows have proved particularly successful and fully justified the innovation.

In conjunction with the Table Shows an amateur judging competition was conducted and was a most interesting and instructive part of each evening's pleasure. The birds exhibited were mostly of good type and condition. This was particularly noticeable during the concluding nights of the series, showing that members exercised more care in the selection and gave more attention to the staging of their birds.

In reviewing the past year's activities I am sure that members will agree with me that the syllabus as adopted has been the most interesting and instructive of any that have so far been concluded. The attendances have during the year been well maintained and promise a full measure of support for the year to come.

The work during the past twelve months has been purely educational, and if the standard is maintained it must ultimately reflect to the advancement of the Section, the improvement of the Budgerigar and the raising of the judging standard.

In conclusion I would like to thank all members for their assistance, co-operation and good fellowship, and look forward to a happy continuation for our mutual benefit.

Competition winners for the years 1938-39:—Most successful exhibitor: Mr. S. Maher, First; Mr. C. C. Chaffey, Second. Judging Competition: Mr. M. F. Brennan.

Officers for 1939-40:—President: Mr. R. J. Murray. Vice-Presidents: Mr. S. Maher and Mr. L. R. Marshall. Hon. Secretary: Mr. M. F. Brennan. Assistant Secretary: Mr. P. S. Hummerston. Committee: Messrs. P. Harvey, R. B. Browne, Mrs. Browne, Messrs. W. Leete, W. Palmer, R. W. McDonald. Delegates to N.S.W. State Council: R. J. Murray and L. R. Marshall. Delegate to Canary and Cage Birds' Federation: R. J. Murray.

M. F. BRENNAN, Hon. Secretary.

MARINE SECTION.

Thirteenth Annual Report.

The Committee of the Marine Section has much pleasure in presenting its Annual Report for 1938-39.

Attendance at meetings has been good. Most members came regularly and six have been added to our numbers.

Two field excursions were held. The first to Bottle and Glass Rocks was poorly attended. The second to Shark Island was limited to thirty people. On this occasion, the launch "Scylla" had its full complement of passengers who spent an interesting and profitable afternoon collecting.

Arrangements are well in hand for an Exhibition of Australian Marine Life to be held in the Manly Art Gallery in November. Mr. G. P. Whitley is the Organising Secretary.

Exhibits are a feature of every meeting and have proved so popular that several evenings have been devoted to them at the expense of lectures. Those who have specially contributed to the success of these have been Messrs. H. S. Mort, C. F. and J. Laseron, Mel. Ward, H. J. Bernhard, G. P. Whitley, T. Iredale, Miss J. Allan and Miss E. Duff.

A number of interesting illustrated lectures have been given as under:—

1938.—

July 4th. "Lord Howe Island"—Mr. W. J. Campbell.
Sept. 5th. "American Pearl Shells"—Miss Joyce Allan.
Oct. 5th "Seaweeds"—Miss Valeri May, B.Sc.
Nov. 7th. "Sea-Birds of Sydney Harbour"—Mr. T. Iredale.
Dec. 5th. "Great Whales of Australian Waters"—Mr. David Stead.

1939.—

Feb. 6th. "Crabs of the East and North Coasts of Australia"—Mr. Mel. Ward.
April 3rd. "Mangroves and Birds"—Mr. K. A. Hindwood.
May 1st. "Recent Researches in Ichthyology"—Mr. G. P. Whitley.
June 5th. "Regeneration of Animals"—Miss Joyce Allan.

In conclusion, the Committee wishes to express its thanks to all members for their hearty co-operation and enthusiasm throughout the year.

JOYCE ALLAN,
Chairman.

MAISIE GOLDING,
Hon. Secretary.

ORNITHOLOGICAL SECTION

Annual Report.

In presenting the annual report of the Ornithological Section of the Royal Zoological Society, it is with great pleasure that I am able to inform the members of the completion of a most successful year. The average number at the meetings was slightly higher than the preceding year, while in the Jubilee month of the Society it was fitting that a record sectional attendance of 68 should take place. This was at the meeting held on 17th March and the lecture was delivered by Mr. R. P. Cooper on "Some Birds of Central Australia". Of the total, 52 were members of the Society, the remaining 16 being visitors.

The following is a detailed list of the lectures and the subject matter of their lectures:—

1938—

July 15.—General Discussion.

August 19.—"Wandering in Papua", by C. Price Conigrave.
September 16.—"John Gould in Australia", by K. A. Hindwood.
October 21.—"Honeyeaters of the Sydney District", by Members.
November 18.—"Sea Birds of Sydney Harbour", by Tom Iredale.
December 16.—"Fairy Wren", by N. W. Cayley.

1939—

January 20.—General Discussion.
February 17.—"The Gippsland Forest", by D. Leithhead.
March 17.—"Some Birds of Central Australia", by Roy P. Cooper.
April 21.—"Avian Embryology", by Dr. G. Halloran.
May 19.—"A Naturalist Abroad", by E. J. Bryce.
June 16.—"Life on Willis Island", by Courtesy of Harringtons Ltd.

An innovation for the section were the two nights set aside for a general discussion on birds. These were to enable members to voice their problems for elucidation and proved most successful.

Three distinct groups of birds were embraced in the lectures delivered on Honeyeaters, Sea Birds and Fairy Wrens by various members and Messrs. Iredale and Cayley respectively. Dr. Garnet Halloran in his lecture on "Avian Embryology" revealed a number of little known facts and showed the amount of work necessary to cover only one phase of ornithology.

John Gould's travels and work in Australia was ably covered by

Mr. K. A. Hindwood, who also published a number of papers on this subject in the special Gould issue of the "Emu".

A wide field was covered in the lectures on "Wanderings in Papua" by Mr. C. Price Conigrave; "The Gippsland Forest" by Mr. D. Leithhead; "Some Birds of Central Australia" by Mr. Roy P. Cooper, and "A Naturalist Abroad" by Mr. E. J. Bryce.

Mr. K. A. Hindwood has been elected a Corresponding Fellow of the American Ornithologists' Union and our congratulations are extended to Mr. Hindwood on the receipt of this well deserved honour.

Three notable trips were undertaken by members during the year.

Mr. M. S. R. Sharland represented the Society on an expedition organised by the Tasmanian Fauna Board for the purpose of searching for the Thylacine or Tasmanian Tiger, occurring in the wilds of Tasmania. This took place in October and November, 1938, and the expedition was successful in proving the presence of a number of "Tigers".

Mr. E. J. Bryce attended the International Ornithological Congress and also camp-out in France and made many records of the birds to be found in that country.

Mr. Roy P. Cooper visited the MacDonnell Ranges in Central Australia in December and January and compiled one of the first summer lists of birds from that area. A number of new observations were made, particularly as the period of the expedition was one of the hottest on record. All previous recorded expeditions had been made during the cooler months, but very little is known of the reaction of the birds to the extreme heat.

Messrs. Sharland and Waterhouse attended the congress and camp-out of the Royal Australian Ornithologists' Union at Hobart, and Burnie Island.

Two well-known visitors attended the meetings during the year. Mr. F. L. Berney, who is one of the original foundation members of the R.A.O.U., paid us a visit for the first time. Dr. Serventy, of Western Australia, has been transferred to this State and is stationed at Cronulla. Whenever possible, Dr. Serventy has stated he will attend our meetings.

The list of the unprotected birds of Australia which was in course of compilation at the previous annual meeting has now been completed and a copy has been forwarded to the Chief Secretary, and it is hoped that uniform Acts for all States will eventuate, also that extra protection will be given to our birds.

The literary work of our members has continued at a high standard, many books and papers being published. The most outstanding of these is the latest work by Mr. Neville W. Cayley on "Australian Parrots". This is of a larger and more extensive nature than his previous books and ranks as his finest effort. The illustrations are excellent and the letterpress is of interest to both the field ornithologist and the aviculturalist.

Mr. Hugh S. Gladstone, of England, published a book on "Thomas Watling, the ex-convict". Watling made many paintings of birds, now known as the "Watling Collection" during his stay in Australia and it was mainly on the representations made to Mr. Gladstone by Mr. K. A. Hindwood that the work was undertaken.

An index of the first 38 volumes of the "Emu" has been compiled by Mr. T. A. Everitt and published as a separate part of the "Emu". This is invaluable for reference to the "Emu".

In September, 1938, was commemorated the centenary of the landing of John Gould in Australia and a special issue of the "Emu" was made dealing entirely with Gould's works. A large percentage of the papers were compiled by members of this Section.

Mr. Alec. H. Chisholm, during his visit to England, was fortunate enough to secure a number of original papers of Gould's also the diary of John Gilbert. Mr. Chisholm has very generously presented these papers to the Mitchell Library.

An event of great importance is the presentation by Mr. Gregory Mathews of his most extensive library on Australian Birds to the

Commonwealth Government. This collection will be housed in the National Library at Canberra and will be available to Australian Ornithologists.

The usual annual camp-out was again held at eight-hours week-end at the cottage at Gundamain. This cottage was kindly placed at the disposal of the sectional members by the National Park Trust through the courtesy of Mr. N. W. Cayley. The cabin has also proved to be very popular throughout the year and has been regularly visited.

The season has been a most unsatisfactory one for the breeding of birds. Bushfires raged throughout the State, while in Victoria the damage caused to the flora and fauna was enormous. Many of the water birds have not nested for a number of years, but bounteous rains in March and April followed by spring-like weather led to a number of species of birds nesting. Reports from all over the State disclose that not only have the water birds successfully hatched out and reared their broods, but many of the common land birds have done likewise.

The heat was mainly the cause of a number of birds occurring in the Sydney district which are not usually to be found there. Many hundreds of musk, rainbow, little and scaly breasted lorikeets also swift parrots were driven to the coastal area, while a record of approximately a hundred fork tailed swifts was noted at Lakemba on 10th December, 1938. These birds rarely visit the coast and undoubtedly were driven here by the weather conditions.

In the centre of Australia records compiled disclose that many birds were absent which are usually recorded during the cooler months. This was particularly noticeable with the birds of prey.

The most outstanding observation for the year was the record made by Mr. Chaffer of the occurrence of the white-tailed tropic bird flying over the housetops at Mosman on 13th January, 1939. In the previous annual report mention was made of the third occurrence of this bird in Australia and within twelve months the fourth record has been obtained. The weather bureau reports that about that date cyclonic disturbances were centred around New Caledonia and these may have been instrumental in driving the birds to our shores.

By a decree of the Chief Secretary, the duck season has been opened from 1st July, and negotiations have been in progress in an endeavour to have this season postponed until a later date. Comprehensive reports from Leeton members of the R.A.O.U. have been submitted and it is hoped that this year the opening date will be postponed.

The Chief Secretary requested the Council of the R.Z.S. to submit a report on the birds of National Park, and Mr. Hindwood, of this section, prepared a comprehensive list.

In conclusion, the officers wish to express their appreciation to the lecturers and to all others who have been instrumental in making this year one of the most successful on record.

M. S. R. SHARLAND,
Chairman.

ROY P. COOPER,
Honorary Secretary.

SYLLABUS OF SECTIONAL MEETINGS, 1939-40.

AVICULTURAL SECTION (Second Monday in the Month, except when a Public Holiday, then the following Monday)—

1939—

July 10.—"Bees, Swarm Control and Queen Culture", by W. Goodacre.
August 14.—Members' Night. Individual Experiences.
September 11.—"Soft-bills", by Messrs. Dummett, Hargreaves and Whaling.
October 9.—"Why Australian Birds appeal to me", by Neville W. Cayley.
November 13.—"Reminiscences from my Diary", by C. Camp.
December 11.—"Fascination of the Study of Birds", by Tom Iredale.

1940—

January 8.—"Experiences with Birds", by K. A. Hindwood.
February 12.—Table Show. Judging and discussion by members.
March 11.—"Birds of Tasmania", by M. S. R. Sharland.
April 8.—"Study of Birds under Control", by Dr. Frank Marshall.
May 13.—"Charm of Australian Finches", by Frank Buckle.
June 10.—Annual Meeting.

BUDGERIGAR SECTION (Third Tuesday in the Month)—

1939—

July 18.—Table Show, Type only, any variety.
August 15.—Table Show, Green, any variety. Lecture by T. Iredale.
September 19.—Table Show, Blue, any variety.
October 17.—Table Show, Grey-wing Blue, any variety, normal and 50% body colour.
November 21.—Table Show, Young Birds, unbroken cap, rung or unrung.
December 19.—Members' Night.

1940—

January 16.—Table Show, Clear-wings, any variety.
February 20.—Table Show, young birds, ringed 1939.
March 19.—Table Show, Self-coloured varieties, to include Lutins and Albino.
April 16.—Table Show, Cinnamon-wings, any variety.
May 21.—Table Show, any variety not provided for in standard of perfection.
June 18.—Annual Meeting. Table Show, Grey-wing green, any variety, normal and 50% body colour.

Table Shows are open to all financial members. Nomination fee 3d. per bird. Trophy for best bird in each show. Amateur judging competition will be conducted during the series. Trophy on completion of series to member having the greatest number of points according to judges' placings. Trophy for most successful exhibitor, as well as runner-up for the series.

MARINE ZOOLOGICAL SECTION (First Monday in the Month, except when a Public Holiday, then on Tuesday)—

1939—

July 3.—"Productivity of the Sea", by A. Simpson.
August 8.—"Some Modern Aspects of Oceanographical Research", by J. M. Thomas.
September 4.—"Crab-catching with Mel", by Mrs. M. Ward.
October 3.—"Preliminary Survey of the Marine Ecology of Long Reef", by Miss E. Pope.
November 6.—Lecture.
December 4.—"Crustaceans in Relation to Man", by A. N. Colefax.

1940—

February 5.—"Sea Snakes", by J. R. Kinghorn.
March 4.—"Travels in Westralia", by G. P. Whitley.
April 1.—"Variations in the Life History of an Organism", by Miss V. May.
May 6.— ————, by A. Jacobs.
June 3.—Annual Meeting.

ORNITHOLOGICAL SECTION (Third Friday in the Month)—

1939—

July 21.—"The Sea-birds of Lord Howe Island", by K. A. Hindwood.
August 18.—"Contrasts in Sex Coloration", by Neville W. Cayley.
September 8.—General Discussion.
October 20.—"In Search of Museums", by J. R. Kinghorn.
November 17.—Camp-out of the Royal Australian Ornithologists' Union at Leeton.
December 15.—

1940—

January 19.—"Hawks", by T. Iredale.
February 16.—"Instincts of Birds", by N. L. Roberts.
March 15.—Film: "Northern Territory".
April 19.—"Colour Changes in Birds", by Roy P. Cooper.
May 17.—General Discussion.
June 21.—Annual Meeting. Chairman's Address, by M. S. R. Sharland.

THE NINTH INTERNATIONAL ORNITHOLOGICAL CONGRESS AT ROUEN.

By E. J. Bryce, F.R.G.S.

The Ninth International Ornithological Congress was opened by the President, Professor A. Ghigi of the University of Bologna on May 9, 1938, at the Town Hall, of Rouen.

About 300 members, of which 90 were British, took part in the Congress, and 32 different nations were represented.

Arrangements were organized by Mons. Jean Delacour, General Secretary of the Congress, ably assisted by Mons. Robert Regnier (Director of the Museum of Rouen) Secretary of the French Executive Committee.

The permanent Executive Committee consisted of MM. W. de Beaufort (Holland), J. Berlioz (France), F. C. R. Jourdain (Great Britain), E. Lonnberg (Sweden), E. Stresemann (Germany), and A. Wetmore (U.S.A.).

The work of the Congress was divided into 4 sections—

1. Taxonomy and Geographical Zoology.
2. Anatomy, Physiology and Embryology.
3. Biology.
4. Applied Ornithology.

The first day an expedition was undertaken to Bon Secours and La Corniche de Rouen, where many nests were located, and in the evening a reception was held in the Town Hall.

On the following day a garden party was given in connection with the celebrations of the Centenary of the Jardin des Plantes, and in the evening the principal buildings in Rouen were floodlit.

On May 11th Mons. Delacour entertained the whole Congress at a Garden Party, held in his charming private Zoological park at Cleres. His collection of rare pheasants is the finest in the world, and in the artificial lakes Flamingo's, Red Ibis and many rare ducks disport themselves. Rheas, Cassowaries and Crested Cranes strutted about the green lawns, and Humming birds are free to fly from their glass house into a netted garden, a freedom not usually given to these birds in other zoos. The Chateau dating back to 1065 housed artistic treasures of great value and one of the finest ornithological libraries in the world. Unfortunately during the night of February 15th this year whilst the owner was away in Indo China, a terrible fire destroyed in a few hours most of these marvellous collections and wonderful library.

Next day a long excursion was made in the valley of the Seine to the Forest of Brotonne, Mauny and Roches d'Orival, ideal places to observe the birds of Normandy, and in the evening a banquet was given by the President and members of the Reception Committee. The final meeting of the Congress was held on the evening of 13th May, and it was then agreed that the 10th Congress should be held in America, with Dr. A. Wetmore as President, in 1942.

Many films were shown, amongst these Professor A. Allen's Sound Film, partly in colour, of the Ivory-billed Woodpecker and Trumpeter Swan; Horst Sieward's display of the Great Bustard; Capt. C. W. Knight's studies of the Hammerhead Stork, Secretary Bird and Crowned Hawk Eagle; Dr. M. Stolpe's slow motion of the flight of the Humming birds; and Dr. K. Lorenz' demonstration of the psychology of the young of the Grey Lag Goose, reared in captivity.

An outstanding paper on The Congo Peacock (Afropavo) was read by Dr. Chapin, and followed by a report on the Anatomy of the bird by Dr. P. Lowe. Mr. Lee Crandall's paper on the display forms of Birds of Paradise was also specially interesting.

The next day a large number of the members proceeded to Paris, where they visited the Natural History Museum and attended a reception in connection with the opening of the International Exhibition of Bird pictures. On May 15th the Zoological Garden at Vincennes was visited and a reception was held by the Director, Professor A. Urbain.

In the evening a considerable number of members left for Arles in the South of France, from where the well known bird sanctuary in the Camargue, noted as a haunt of the Flamingo and a great variety of other birds was easily reached. The following morning we were received by the Mayor of Arles and in the afternoon the party visited Nimes and were received at the Natural History Museum, and later a short expedition was made to the Petit Camargue, to visit a colony of nesting Little Egrets and Night Herons. Part of the long afternoon was spent at the mediaeval town of Aigues-Mortes, whose enormous ramparts are a perfect example of the fortifications of the 12th century.

The following day a long excursion was made to the Grande Camargue where in spite of unpropitious weather, a wealth of bird life including Flamingos, Stilts, Harriers, and Warblers of many species were observed.

The Camargue lies in the Rhone delta and is enclosed by the two branches of the Rhone which runs into the Mediterranean. 209 forms of birds have been recorded, of this number 45 are residents.

The country consists largely of salt lagoons with a number of islands where the Flamingos, Avocets and marine Terns nest. There are also marshes and fresh water lagoons with extensive reed beds where such birds as Reed-Buntings, Bearded Tits, Reed Warblers, etc., are found, also Purple Herons, Bitterns, Grebes, Rails and Coots.

There is a small area of woodland where one finds such species as Golden Oriole, Penduline, Tit, Nightingale, Green Woodpecker, Roller, Scops Owl, Dartford Warbler and Stone Curlew. There is also a large colony of Little Egrets and Night Herons in the wooded swamps.

Cultivation is steadily increasing in the Camargue, most of it devoted to the Vine. This area is frequented by the Linnets, Sky and Crested Larks and Redlegged Partridges.

Large tracts of the Camargue have been created a reserve and are administered by "La Societe Nationale d'Acclimatation de France".

Just before the Congress the International Committee of Bird Preservation held a meeting attended by Delegates of 14 countries. The status of the Anatidae throughout the world, the protection of the Quail, and the destruction of sea birds by waste oil was discussed, etc. A Sub Committee to deal with oil pollution was appointed, another to collate information in regard to Nature Reserves in Europe, with a view of promoting the establishment of further areas under an organised scheme. Mons. J. Delacour was elected President of the International Committee, Miss Phyllis Barclay-Smith, Hon. Sec.

The French Government was asked to take steps to see other governments diplomatically in order to convene an International Convention for the Protection of Birds in Europe, as agreed to in Vienna last year.

The writer represented the Society at the Conference.

Reference:

W. E. Clegg.—The Birds of "L'Ile de la Camargue et La Petite Camargue".

In Search of the Thylacine.

Society's Interest in the Preservation of a Unique Marsupial.

By M. S. R. SHARLAND.

(Illustrations from photographs by the author, unless otherwise stated.)

Once fairly well distributed in Tasmania, and with a price upon its head because of its destruction among settlers' flocks the Thylacine, or Marsupial Wolf (**Thylacinus cynocephalus**) is now rarely found outside the rough and unsettled parts of the western area of that State—an area noted for broken ranges, prominent mountains, deep rain forests and abundant streams. The Thylacine exists to-day as but a remnant of the numbers which, 50 or 60 years ago, roamed the countryside, feeding on small marsupials and sheep. Fears have been expressed that it is not far from being exterminated, even in the remaining fastnesses of its mountain sanctuaries. Nowadays, certainly, it is rarely seen. Trappers and prospectors who spend most of their lives in the bush probably see it more frequently than others, because their work takes them into the remote parts of the western country in search of furred game or gold. Pinecutters occasionally chance upon it when traversing this western country for precious softwoods. And when the game season is opened every few years the animal is often caught in snares. But it is in no part specially common, and there are extensive areas in this region where it does not occur at all, or but sparsely, its distribution depending almost wholly on the presence of smaller "game".

It must be emphasised, however, that its failure to reveal itself more frequently is not necessarily indicative of approaching extinction. Great areas of this game country are devoid of human inhabitants, whilst others are only sparsely inhabited. Those who do live there do not specially set themselves the task of looking for it but come across it merely by chance or accident. Moreover, it has to be remembered that the animal is partly nocturnal, hiding in caves during the day and coming out at dusk to track its prey across the plains. But I suppose, the chief obstacle to seeing it is the nature of the country itself, composed as it is of high mountains, broken ridges, boggy plains and forests of extreme density. In the forests, visibility is restricted to a few yards. Progress through them, as well as over the mountains, is most laborious for man, but comparatively simple for animals, such as Thylacine. The open, sedgy plains are seldom free from moisture and deep muddy bogs, and the traveller must perforce watch closely where he steps rather than glance about him in search of game, which, in any case, finds the tall rush-like vegetation effective means of concealment. In most instances, no doubt, it is the animal which sees the man and takes the necessary precautions to get out of his 'way without itself being seen. Few persons have ever actually set themselves out to see it.

Therefore, the only practical way of determining whether the Thylacine inhabits a particular district is to examine game trails for its footprints, for it leaves a distinctive spoor. By the number and distribution of these prints it is possible to gauge approximately the number of animals occurring in a given locality. Naturally, the range of the Thylacine is governed largely by the plentitude or otherwise of the animals on which it lives, and as game in this western country is nomadic, it follows that the predator may be comparatively common in one area one season and absent from it the next, or for several successive seasons.

The Tasmanian Animals and Birds' Protection Board has

MAP OF TASMANIA.

Rex Iredale, del.

Showing the areas traversed by the expeditions in search of the Thylacine. 1.—Area of the first expedition's search. 2.—Area of the second search. 3.—Area visited by the 1938 expedition (the shaded part lying between the Gordon River and the Frenchman's Cap).

despatched expeditions to different parts of Western Tasmania in search of the Thylacine, and these have served to reveal its presence, in varying numbers, in fairly widely separated districts remote from settlement. On one of these expeditions, arranged in the latter part of 1938, much useful information relating to the status of the marsupial was obtained; the party examined a large area of country in the vicinity of the Jane River, extending from the West Coast Road southwards towards the Gordon River, where game is reasonably plentiful and is afforded protection, in large measure, by the rough and broken nature of the country, and the high ranges by which the district is surrounded.

I had the privilege of representing the Royal Zoological Society on this expedition, which was undertaken principally with the object of determining to what extent the country was inhabited by Thylacine, and to examine the area generally to decide whether it was suitable for a faunal sanctuary. The Council of the Society for some time previously had been in communication with the Tasmanian Government and officials of the Animals and Birds' Protection Board, regarding the question of ensuring greater protection for the animal, and had offered to contribute towards the cost of any attempt which might be made to conserve its dwindling numbers by breeding it in captivity. It had urged that, in the interests of science, no effort should be spared to prevent it from being exterminated, and offered to do what it could to ward off this evil day. And, to this end, it obtained the sympathy of the Taronga Park Trust, which agreed to contribute £50, provided a pair of animals were made available to the Park for experimental breeding purposes. The trustees of the Taronga Park Zoo informed the Council that many inquiries about this animal were received each year, particularly from visitors from other countries. If the animal was eventually bred at the Zoo, the young ones, it was stated, would be a source of great attraction, not only to oversea visitors, but Australians in general.

As a result of representations made to the Chief Secretary of Tasmania, the Society was informed that it was the intention of the "Fauna Board" to collect any data procurable bearing upon the position of the Thylacine with a view to the reservation of an area in a suitable locality as a sanctuary to aid in the preservation "of some animals for as long a period as it is possible to keep them". Shortly after the receipt of this communication, the Society received an account of two expeditions which examined, in one case, an area in the Arthur River district, and in the other, a district lying just south of the West Coast road, on the north-western side of the Frenchman's Cap. These revealed the presence of the Thylacine in both districts.

After further correspondence had passed between the Society and the Tasmanian Fauna Board, the Society received an invitation from the Board to send a representative to Tasmania to accompany the next field party on its trip to the Jane River district situated still farther south of the West Coast road, which was reported to be "good 'tiger' country". The Council felt that it would like to have first-hand information about the steps which the Tasmanian authorities were taking to preserve the animal, and accordingly it accepted the invitation. It so happened that I was selected to accompany the party. Some of my travelling expenses were defrayed by the Society, and, while on the expedition, I was the guest of the Tasmanian Animals and Birds' Protection Board, the officers of which made the arrangements for the trip, and at the same time ensured that my visit should be both instructive and enjoyable.

DESCRIPTION OF THYLACINE.

Before going into the details of the expedition, it may be fitting here to describe briefly the chief characters of the Thylacine.

Variously called "wolf", "tiger", and "hyaena", this primitive type of marsupial is actually none of these. Although it bears some superficial likeness to a dog or wolf, it is a distinct family, with close affinities with the Dasyuridae, which includes Phascogales, Dasyures and the Tasmanian Devil (**Sarcophilus harrisi**); and although fossils indicate its presence on the mainland of Australia in the past, it is now not found beyond Tasmania. Its scientific name, **Thylacinus**

cynocephalus, provides an appropriate description, as a literal translation of the term is "the pouched dog with a wolf head".

"Wolf" is more descriptive than the more commonly used term, "tiger". In colour, the Thylacine is a grizzled tawny grey, with 16 or so dark brown transverse stripes on the back, base of tail and flanks. These stripes become shorter as they continue forward to the middle of the back. Somewhat ungainly in form, and having an awkward, though swift gait, its general appearance is much like that of a wolf, especially about the head, the large jaws opening back almost to a level with the ears. The tail merges gradually with the body, and is generally held in a stiff, semi-drooping attitude; it is not free or capable of being "wagged", like the tail of a canine. The muzzle and dentition are very dog-like; in fact, the skull can only be distinguished from that of a large dog by certain important details of structure,

Known as the "pouched dog with the wolf head", this primitive marsupial was the object of the expedition's quest. Evidence of its existence in fair numbers was found in the western part of Tasmania.

THE THYLACINE.

—Photo by A. F. Basset Hull.

namely, the number of incisor teeth and the inflection of the angle of the lower jaw. The animal hunts largely by night, and mostly singly, or in pairs, but there are records of the sight of three or four together, apparently constituting a family pack.

It is a timid animal and will not attack man unless cornered. In fact, when taken young, it has been found quite tractable and easy to tame. Generally, four young ones are produced at a time, and after these have been carried in the pouch for a brief period, the mother makes a nest for them in some sheltered spot, sometimes in the cave or rock cavity where she sleeps. The male has a vestigial pouch.

Lake St. Clair is one of Tasmania's most picturesque lakes. The diabase mountains, in parts, rise precipitously from its shores, and in other parts, the slopes are clothed with dense vegetation extending to the water's edge. It is exceedingly deep, in most places from 40 to 70 fathoms, and in some parts as much as 90 fathoms. The lake is at the southern extremity of an extensive game sanctuary, which comprises nearly 160,000 acres, and extends through to Cradle Mountain in the north. This area includes some of the finest mountain scenery in the State, and game is said to be fairly plentiful.

After leaving Lake St. Clair and proceeding towards the West Coast, the scenery changes sharply. The road leaves the tall timber, which is a feature of the country between the Ouse River and the lake, and traverses more or less open forests and gentle slopes, where the first of the Button-grass appears, until it reaches the saddle of the King William Range and descends into the magnificent Surprise Valley, where the traveller sees tall peaks, deep gorges and endless vistas of Beech forests on both sides.

PEAKS OF THE KING WILLIAM RANGE.

The steep walls of the King William Range, with their prominent dolerite peaks, form the eastern boundary of a vast ampitheatre in which the Thylacine was found to exist.

The King William range, extending for 15 or 16 miles almost due north and south and distinguished for its tall peaks and precipitous crags, may be said to be the gateway to the west. After leaving the high saddle of this range, the traveller may observe the flora to change no less than the type of rock which forms the ranges and peaks. Diabase (or dolerite), the predominant basic rock of Tasmania, is displaced by archaic schists and conglomerates which impart a totally different aspect to the mountains. From any high point he looks over a tract of country as rough as any he may have set eyes upon. There is something sinister in the vastness of the ranges, the peaks of which rise like the teeth of some gigantic cross-cut saw, scarred and broken by time. He may well marvel at the sculptural forces of Nature which have produced such a wilderness of rock, crag and valley.

Looking south-west, we could see part of the Frenchman's Cap,

Hunting is done largely by scent, and the animal is able to wear down its prey in the chase, which may last for hours.

The area which the expedition visited comprises some of the wildest and most broken country in Western Tasmania, and let it be also said, some of the most picturesque. Intersected by several streams, often in flood, it contains mountains touching 5,000 ft. with vertical peaks and high crags devoid of timber. Extensive talus slides, destitute of any vegetation, are a feature of the diabase mountains, while the perched-block or "organ-pipe" formations, which characterise so many of these western ranges, are also prominent. On the older conglomerate ranges, which are perhaps more typical of West Coast scenery, marble-like quartzite occurs as outcrops and actual

A BARRIER OF BAUERA.

The Bauera plant, with its thin, twining branches, makes progress difficult in forest country.

peaks. These white crags and cliff faces, when illuminated by the sun, do not look unlike big fields of snow.

Between the mountains, often at a high elevation, lie extensive plains composed of Button-grass (**Mesomelaena sphaerocephala**), a light olive-brown, sedge-like verdure, which forms definite plant communities in moist situations near the source of rivers, and gives rise to a peat-like soil which stains all intersecting streams a deep tan. Various species of Eucalyptus in places encroach upon these plains or form isolated clumps on old moraines, but the environment, moist and boggy as it is, suits only the Button-grass and certain flowering plants which like to have their roots in mud, such as Bauera, Melaleuca and various kinds of Epacris. Progress over what appears from a

distance to be a smooth grassy plain, is too often found to be arduous and tiring for the traveller, especially should he be laden with a heavy pack. The Button-grass grows in the form of tussocks. The large clumps possess a wide and solid base, whilst the thick foliage of even smaller clumps is sufficient to support one's weight. But often the clumps are too widely spaced to permit of stepping from one to the other, and after rain the ground between them is merely ooze, into which one's legs will sink to the knees.

The difficult nature of the ground, whether on the plains or mountain foothills, precludes the use of pack horses for any exploratory trip. Thus everything for an expedition must be carried on one's back—food, bedding, photographic material, axes, tents, and the many sundries needed for a sojourn for a fortnight or so in country where the traveller is cut off from all ordinary amenities. All luxuries must be dispensed with—the bare necessities to maintain vitality alone can be afforded, though it is possible for a party to take advantage of game for fresh meat. And, even after discarding all but the equipment strictly necessary and making the pack as light as possible, the traveller is fortunate if his load should weigh less than 60 lbs. That is about the average weight per man, though in some cases packs of up to 90 lbs. are carried at the outset.

Many of the valleys and ravines are filled with perilous scrub, which hampers progress. The peculiar Horizontal Scrub (**Andopetalum biglandulosum**) grows in places like a giant net extending across the valleys among forests of Beech and Eucalypts, and making the way of the traveller one of tremendous labour and discomfort; while the Bauera, trailing its vine-like branches over surrounding scrub, is no less unpleasant to penetrate. Although the branches of the Bauera are thin and wiry, they are too tough and much too entangled to cut, and the only mode of progress often is to throw oneself high upon the soft branching mass and roll over to the other side.

Probably the most tedious country to cross is that which has been burnt a year or two previously. Here, vegetation has grown quickly—mostly cutting-grass and native flowering plants. The scrub, perhaps, is six or seven feet high, just enough to restrict visibility to a few yards. Fortunately, the verdure is easily parted, and not matted like Horizontal or Bauera, but, at the same time, it conceals many pitfalls—deep hollows, burnt stems of trees, dry fallen wood, sharp stakes and boulders into any of which the traveller may blunder with painful results to shins and ankles. Each day brings its special difficulties, for the type of country varies quickly. One day the way leads across stony ridges, over mountains, the next through dense forests of Beech and Sassafras, and then again across sodden, heavy plains, each of which may test the traveller's endurance to the full. Mostly, he looks forward to the end of the day, when, with the smoke of the camp-fire curling attractively to mingle with the mists of dusk, he can rid himself of his heavy pack, take a refreshing dip in some tree-lined stream, cook a meal and turn in to bunk or sleeping bag to recover some of the energy which his labours have dissipated.

DETAILS OF EXPEDITION.

The expedition left Hobart in the morning of Saturday, November 12. The personnel was: Trooper Arthur Fleming, of Bothwell (leader), Trooper Robert George Boyd (Fitzgerald), Constable John Henry Royle (Hobart) and myself. We had as our guide, Mr. A. J. Best, of the Jane River gold prospecting field, whilst Mr. Charley Gordon, also of the field, assisted us with the packing to the Jane River. Metropolitan Superintendent W. G. Oakes, of Hobart, came with us by car as far as the Jane River turn-off, on the West Coast road, approximately 120 miles from Hobart. We had a large sedan car and a utility truck for the transport of luggage to the turn-off, which is a mile or so west of Mt. Arrowsmith, with Mt. Gell to the north, the Junction Range to the West, and the Franklin River, a few hundred yards away, running over a stony bed through tall Dicksonia ferns and Notofagus forests.

On the way out from Hobart, we diverted our course to the extent of four or five miles to visit Lake St. Clair, the source of the Derwent River, about 10 miles in length and two miles broad. With its attractive bays and reaches, and its framework of encircling mountains,

though the actual cap was veiled by cloud—a mountain, one of the most impressive in contour I had ever seen, which was to keep us company through the days ahead. Other peaks and ranges rose in wonderful confusion, and the nearer slopes were packed densely with bright green Beech and Conifers interspersed with which were high marble crags rising through the verdant tones of the trees. This was the area into which we proposed to penetrate the next day.

The Jane River gold field is located about 30 miles south of the West Coast road from the point at which we camped the first night. The population varies from 10 to 20 persons, but the average is about 15. Our guide was waiting for us on the roadside, but one of our packers had not yet turned up. As there is no telephonic or telegraphic communication between Hobart and this remote prospecting field, it was necessary to employ wireless to advise the packers of the time of our arrival at the depot on the road. There is a receiving set on the field, and the Commissioner of Police, Col. J. E. C. Lord, made arrangements with the Tasmanian National Station, 7ZL, to broad-

MOUNTAIN AND BUTTON GRASS.
A view of East Peak, one of the outlying points of the Frenchman's Cap, with a button-grass plain in the foreground.

cast this information at a prearranged time on two nights before our departure from Hobart.

We proposed to make the field our headquarters for a few days—a base from which to undertake short journeys into the surrounding country, for we had heard that traces of the Thylacine had been seen there. But it was necessary first of all to get out impedimenta to the field. Even with its reduction to bare necessities, its combined weight was too great for us to carry unaided. At least one additional packer was required, or perhaps two. Night came, and still no packer. We were beginning to doubt the value of the broadcast message, and set about planning to leave part of our gear at the camp, when we heard a shout down the track, and into the depot hut a few seconds later stepped the man for whom we had been waiting. Yes, the wireless message had come through all right, and what was better, he had made arrangements for another man to assist us with the packing. A letter sent from Hobart would not have reached him in a week.

Leaving early next morning on the track to the field, we crossed the Frankin River and had a stiff climb up Franklin Hill, 2,000 feet, on a grade of 1 in 10. From the top of the hill we gained our first unobstructed view of the Frenchman's Cap, which stood boldly revealed about 10 miles to the south-west, its huge cube-shaped top glistening like snow, and foothills draped about it in wild confusion. The mountain, which is just under 5,000 ft. high, possesses three main peaks or eminences, and is divided approximately in the centre by a cleft at least 1,000 ft. deep, with sharply vertical sides. The cap itself is the highest point, and from a western aspect resembles closely the type of cocked hat as worn by the French in days gone by.

From the main bulk of the mountain two high spurs run east and south each terminating in a secondary peak or eminence known, respectively, as "highest peak east" and "highest peak south", though

LEADER OF THE PARTY.

Trooper Arthur Fleming, of the Tasmanian Police (leader of the field party), with his 70 lb. pack.

the names are generally contracted to "east peak" and "south peak". These secondary peaks are prominent landmarks, and not being so high as the cap itself, are less frequently obscured by cloud or mist. Except when we were penetrating densely-wooded valleys or skirting behind a hill which intercepted our view of the mountain, one or other of them was seldom out of sight during the whole of our journey.

Crossing the Loddon River about 4½ miles out, where we first saw the rare Huon Pine (**Dacrydium franklinii**) and the more common Celery-top Pine (**Phyllocladus rhomboidalis**), we traversed some six miles of sodden Button-grass plain, intersected every two miles or so,

with tongues of Eucalypt growth extending down old moraines, skirted round the base of East Peak and arrived at a slab hut at the foot of Calder Pass.

Known in prospecting vernacular as "the middle dump", this hut is approximately midway between the West Coast road and the Jane River field, and we resolved to make camp here for the night. Game trails were plentiful in the scrub on the adjacent hill slopes, and the tracks of the Wombat (**Phascolomys**) were well defined; but so far we had not found traces of Thylacine. In some thick bush clothing a small gully at the back of the hut the Olive Whistler (**Pachycephala olivacea**) was nesting, and other birds there included the Majenta Robin (**Petroica rodinogaster**), Brown Thornbill (**Acanthiza pusilla**), Crescent Honeyeater (**Phylidonyris pyrrhoptera**), Yellow-throated Honeyeater (**Meliphaga flavicollis**), Green Rosella (**Platycercus caledonicus**), "Black Jay" (**Strepera fuliginosa**), and Beautiful Firetail (**Zonaeginthus bellus**), the last-named being fairly common.

THYLACINE FOOT IMPRESSIONS.

Leaving the "middle dump" shortly after 8 o'clock the next morning and passing the entrance to Calder Pass on our right, we climbed 300 or 400 feet to the top of a densely-clothed hill, and then descended into the Beech forests along Thirkell's Creek, where we saw the first definite footprints of Thylacine. In the mud on the track that we were following the animal had made a splendid impression. Claws and "pads" were delineated clearly. It was obvious that the animal had passed that way quite recently, for the impression had been unaffected by the rain which was falling lightly or by water running down the track.

Although this district contained a few dogs, more or less wild, and living on the game, and their footprints were seen in moist places among the Button-grass, the construction of their feet precluded any possibility of confusing their imprints with those of the Thylacine. The feet of the Thylacine have been likened to those of a dog, but the resemblance is superficial only. The manus, or "hand" of Thylacine leaves a distinct impression, in which five digits and claws are generally visible. The digits are arranged on about the same plane, and moreover are fairly evenly spaced, so that when the hand is pressed into mud or soft soil, all are clearly to be seen. In the imprint of a dog's hand, however, the marks of only four digits are visible; the fifth digit, being situated about an inch above the level of the others, does not reach the mud unless this be soft enough to cause the limb to sink almost to the elbow. An ordinary impression of a dog on the track, therefore, shows only four digits and claws, so that identification is simple and not to be confused with that of Thylacine. But in the pes, or true feet, of Thylacine—the hind feet—only four digits are present, the hallux, or big toe, being absent.

Having brought some plaster of paris with us for the purpose of making impressions of Thylacine footprints, we now set to work to get our first imprints records. In the moist gully, with water running between our boots, it was with some difficulty that we got the material to dry quickly enough to avoid a long delay, but a small fire of leaves and bracken worked wonders and after about half an hour we had obtained two excellent impressions from different imprints. These were packed in moss and carried in a spare billycan.

Our way then led through a magnificent Beech forest, interspersed with enormous Peppermint Gums, King William Pine, Huon Pine, Bauera, Melaleuca, Leatherwood and other forest growth, till we emerged once more on to boggy plains and came to the Erebus River, running through a gorge in the direction of our destination. Along the edge of the Erebus we saw several "run-ways" of Platypus, consisting of well-worn U-shaped gutters extending down the sloping banks among ferns and low scrub. After following the course of the Erebus for a few miles, during which we saw further tracks of Thylacine, we skirted the southern end of the Algonkian Mountain, came in sight of the Prince of Wales Range, and, in late afternoon, arrived at the Jane River settlement, where about a dozen gold prospectors gathered to give us welcome. We established ourselves in two of the prospectors' wooden huts, about two miles from the Jane River, on

wnat is known as Ridge Creek, where some substantial finds of metal have been made.

Several stories relating to encounters with "hyaenas" were related to us by prospectors and packers round the fireside at night, and although some of these were gained from knowledge which was second-hand, or even time-worn, having been passed from one individual to another, we did not under-estimate the value of information obtained from their conversations. There were few of the men who had not spent most of their lives in the bush, chiefly in the remote parts of the State. Their search for gold, for pelts, for timber, or the sundry other avocations which they had followed from time to time, took them to places where few men had been before, and where, incidentally, few would want to go if they had their choice. They lived to

TRACKS OF THE THYLACINE.

Making plaster of paris casts of footprints of the Thylacine along Thirkell's Creek track.

a large extent on the natural products of the country. If their eyes were not tracing flecks of gold along the creeks, they were trailing game across the moors and plains or estimating the superficial measurement of some giant Conifer growing at the river's brink.

The trappers among them could perhaps give us the most useful information. We sought them. Some had been professional trappers in their time, but with the closing of the game season and lower price of skins, had resorted to gold seeking or osmiridium mining, which in some cases had proved more profitable.

THYLACINE IN HUT.

Some miles south-east of the Jane River field is the osmiridium field of Adamstown, another remote area located among high mountains and dense forests, but supporting a considerably greater population than the settlement in which we had taken up our headquarters. A fairly good track links it with the railway town of Fitzgerald, in the upper reaches of the Derwent Valley. Along this track a lonely bushman lived, his home being a hut of slabs, hewn from the forest on the adjacent slopes. The climate in this quarter is generally severe, with ample rain and snow, and frequent storms during which the wind blows with the velocity of a blizzard. The track is not infrequently obliterated by snow.

Returning late one evening from Fitzgerald with supplies, the owner of the hut was overtaken by a storm. The wind whipped the snow into his face and soon gathered inches deep along the track. The wind was of hurricane force, intensely cold and penetrating. Stumbling along in the semi-darkness, the man came within sight of

THE JANE RIVER "HOSTEL."

A pine-cutter's cabin near the edge of the Jane River, where the party camped for two nights.

his rude home, and at a glance saw that the door had been swung open by the wind. A few minutes more and he stepped inside, and began to loosen his pack. But quicker than he went in was he out again! The hut was occupied by a Thylacine! It had apparently sought refuge from the storm. It was problematical who got the biggest surprise—the quadruped or man. The animal, which had been standing near the fireplace, made an immediate dash for the open door, and rushing out into the snow disappeared through the trees.

During that night the storm raged with increased severity. The man lighted his fire, cooked his tea and though not afraid of a second encounter with this wolf-like creature, whose timidity was proverbial, he took the precaution of locking the cabin door securely. But when about to retire for the night he heard a suspicious noise outside the door—a sound like a dog sniffing at the chinks in the woodwork. Grasping a gun, and holding a torch in the other hand, he dislodged the wedge-lock and kicked the door open. In the faint light given by the torch he saw the brown form of a Thylacine running away,

and then about 20 yards distant. By the time he could raise his gun the animal had disappeared, but he fired a couple of barrels in the direction it had taken in the hope of discouraging it from further visits. His shots were effective, apparently, for he did not see it again, nor did it worry him further. The animal having found the hut a haven in the storm on its first visit, had returned when the storm was at its height. Prospectors said that no instance of a parallel nature was known.

There was another trapper who told us a more amusing story. Making his round of his snares one day, he came to one in which a Thylacine was caught by a leg. In its struggles to get free, it had twisted the snare so tightly that it had cut into the flesh, and in addition, the animal had bitten its leg in its bid for freedom. And its mood was not pleasant! The trapper had a companion with him, who was something of a new chum where wild animals were concerned. And when he declared that he intended to try and release the Thylacine alive, his companion became greatly alarmed. Our informant was not clear about the method employed to give the animal its freedom, but at any rate, while the necessary preliminaries were being made, the "new chum", deeming discretion the better part of valour, climbed a stout sapling to be out of the way when things happened.

The animal was released from the snare, and the trapper stood off with his gun. Limping badly, but making no effort to "charge" the man who was responsible for its discomfort, it walked casually over to the tree in which the new chum sat perched amid the branches. "Shoot it, shoot it", he cried to his friend with the gun, who by this time was standing behind another tree. The Thylacine encircled the tree several times. It looked savagely at the man on his precarious perch, whose nervousness set the foliage quivering as though agitated by a breeze. It sniffed at the stem, and gave every indication of a desire to reach him. It seemed that it blamed him for the pain in its leg. He tried to climb higher, but the sapling began to bend with his weight, and once again he called to the trapper to make an end to the animal. But with a final sniff at the air, the Thylacine went loping off across a clearing, and to the man's relief, was lost to sight in the scrub.

"Why didn't you shoot? It might have got me", he exclaimed when he dropped from his place of safety, and turned to look nervously in the direction of the clearing.

"I couldn't", the trapper replied, amused at his discomfiture; "I couldn't move a hand for laughing".

The Thylacine has been known to attack dogs when cornered, but so far as I can determine there is no record of its ever having attacked man. There are at least two instances when prospectors have come face to face with it while crossing flooded rivers on a log, but in each case it was the Thylacine which gave way or came off worst. One of these instances is recorded in Geoffrey Smith's book, "A Naturalist in Tasmania", published by the Clarendon Press, Oxford, in 1909, and another is contained in a story told to me by an old prospector on the West Coast of Tasmania, who spent his last years in a cottage at the foot of the Grampians, in Victoria, where I met him. This, perhaps, is worth repeating.

"I was prospecting in the wild country in the Savage River at the time", he said. "Rain falls almost constantly in these ranges, but heavier falls than usual had swollen the river so much that I could not cross it in the ordinary way—by wading. Walking about a mile down stream, I found a tree, nearly 100 ft. long. It had been uprooted on the bank by some previous flood, and its stem and dry branches extended in the form of a natural bridge to the other side of the river. I decided that this would be a good crossing place, and so off I set. But when nearly half way across, I saw to my alarm, a 'tiger' standing looking at me. It had chosen the same place to cross, though why it hadn't seen me on the other side was a mystery.

"Well, I'd been warned about the so-called ferocity of this animal. And when I met it in such circumstances for the first time, where we stared at each other, half in fear, half in defiance, each afraid to turn back because of the slippery nature of the log, my feelings can

better be imagined than described. About nine or ten feet apart we stood, as if transfixed to the log, trying to anticipate each other's next move. At least, that was what I was doing—trying to think what the 'tiger' would do and I suppose he was thinking what I was going to do. Anyhow, neither of us was prepared to give way, although the 'tiger' occasionally turned its head to look back to the bank, and then, hesitatingly, at the tumbling waters that swirled beneath us on the log. Weighted as I was with a pack and tools, I dared not wave my arms to try and scare the creature off. I might have lost my balance and gone headfirst into the flood. It was impossible for me to retrace my steps.

"Then, the tension ended suddenly when the 'tiger' made a spring —not at me fortunately, but half-backwards, as if it wanted to reach the bank. It was a desperate bid, and failed. The 'tiger' landed directly into the water, and I watched it struggling vainly as it was

JANE RIVER CROSSING.

A precarious method employed to cross the Jane River, and one that was infrequently used because of the danger of the log rolling!

swept away. Down it went, under and over, and once I thought it would swim ashore, but I lost sight of it round a bend. I believe it met its end. The adventure unnerved me for quite a while".

HUGE AMPITHEATRE.

Our conversations round the homely gum log fires at the Jane River field indicated the presence of Thylacine within our immediate district. Game was not particularly plentiful nearby, but beyond the ridge, in the Button-grass valleys, we might chance upon Wombat, a few Wallaby, and the imprints of the object of our search. Phalangers were rare. The Ringtailed species (**Pseudochirus cooki**) was seen only at intervals; the Brush "Opossum" (**Trichosurus vulpecula**) was here poorly represented by specimens half the size of those of the central plateaux and the east coast. The huts on the prospectors were tenanted by small Phascogales which sometimes kept us awake at night by their foraging excursions among empty food tins and cardboard boxes. Birds were scarce. The Flame Robin (**Petroica phoenicea**) was nesting close by our hut. White Cockatoo (**Kakatoe galerita**) **Strepera, Pachycephala** and **Platycercus** were present in

small numbers. **Acanthiza ewingi** was nesting in a Sassafras tree, its domed nest being placed about 25 feet from the ground. A high nesting site is a characteristic of the bird.

A conspicuous dome-like prominence, approximately 2,000 ft. high, clothed to its summit with Button-grass and dwarfed forms of scrub, rose from the Beech-clad hills directly in front of the Jane River settlement, and as it seemed that an extensive panorama would be obtained from the top, we set out one morning to climb it. The prospectors had named it Warne's Lookout, apparently in honour of the discoverer of gold in the creeks which flowed about its lower slopes.

After an arduous climb over slippery grass and up almost vertical slopes, we reached the top and looked out upon a vast area of plain and mountain, undulating hills and thickly-timbered river valleys. We were actually standing on the southern boundary of a great amphitheatre—a huge depression between the ranges, with smaller basins within it. About 30 or 40 miles by north and south and some 25 miles broad, this area was bounded on the north-east and east by the King William Range—a great diabase wall about 15 miles long and of a uniform height of some 4,000 ft. except where three striking peaks rose sharply from the ridge. In the south-east, extending for some 16 or 17 miles, was the Prince of Wales Range, with crags and cliff-faces shining like snow, and valleys filled with a deep blue mist. The southern boundary comprised the Jane River hills—North Peak, South Peak and the hill on which we were standing and these merged in the south-west with the Norway Range, and in the west with the Surveyor and Deception Ranges. These in turn extended northwards as spurs to the huge bulk of the Frenchman's Cap, the most prominent point in the distance, whilst the northern boundary stood boldly revealed in Mt. Arrowsmith, Mt. Hardy, the Junction and Collingwood ranges—the whole forming a rift-like valley, or roughly circular depression, intersected in the centre of Flagstaff Hill and the Adam Range, somewhat or less magnitude than the surrounding peaks, dotted at intervals with Button-grass plain, open forest, and dense areas of Beech, and drained by innumerable creeks.

It was in this amphitheatre that our investigations were made. On the journey out to the gold prospecting field we traversed it approximately in the centre from north to south, and on the return trip we skirted its western boundaries. Traces of game were found freely on the western side, and we came upon many tracks made by Thylacine, indicating that the animal was fairly common and well distributed. Wombat trails led through the scrub and across the plains, and their large burrows were found in fair numbers on the hillsides adjacent to their feeding grounds. Tracks of Devil, Wallaby, Cat (**Felis domesticus**) Wild, Dog, and Thylacine were conspicuously imprinted in the softer parts of these Wombat pads.

Because of its situation, and the definition of its boundaries, the area enclosed by the mountains would make a splendid game sanctuary, and it is suggested that the Tasmanian Government should be recommended to issue the necessary proclamation for this purpose, for if the Jane River gold field should develop as anticipated, and better means of transport are provided for the settlement, the district will become more thickly inhabited, and, in an open season, game will suffer. The Thylacine is probably as common here as in any other part of the West Coast.

We found some good impressions of its footprints along a muddy tributary of the Jane River, to the South-west of Warne's Lookout, and spent an hour or so making further plaster casts. The animal had apparently been trailing Wallaby, for we could see where the Wallaby had taken long leaps in its hurried progress through the scrub. Tracks of pursuer and pursued were defined very clearly. The Wallaby had tried to cross the creek in one big jump, but landed in the mud near the opposite side. The Thylacine had stepped in the water and trotted through. Farther down the creek we found imprints of a Devil facing the same direction. This suggested that the Devil was following both Thylacine and Wallaby, in anticipation of a "kill". It would dine upon what the Thylacine discarded.

Examining our charts we found that this muddy stream had not been marked or named. Like a good many other natural features of this distant country, its existence had been overlooked, so we set

about remedying the defect. We could imagine no politician or Minister of the Crown being flattered by the association of his name with so insignificant a stream, and it was resolved, therefore, that the selection should be made from the names of the members of our party by the simple act of "drawing straws". In this case, twigs were substituted for straws, and the drawing was prepared. It fell to the lot of Constable Royle to have his name perpetuated in this remote western district. He drew the longest twig, and, tracing the course of the stream with pencils, we inserted the name "Royle Creek", in the charts which we had brought with us.

Fresh tracks of Thylacine were seen after we had finally left the gold prospecting field and were working up the Jane River towards its source on Lightning Plains, high up on the slopes of the Frenchman's Cap. The footprints were impressed in a soft depression at the fringe of an extensive Beech forest, and there were indications that the animal had entered this densely-clothed area in search of game. We followed a rough track, formerly used by pine-cutters, along the banks of the Jane River for several miles, crossing and recrossing the river, both by wading and on convenient fallen logs.

In one place we diverted our course a few chains down the river to see the grave of a piner. It was situated in a delightful spot, on a knoll, a short distance in from the river bank, surrounded by Beeches, Sassafras and Pines, through which the sun cast its green-tinged, filtered rays. At the head of the grave was a simple cross hewn from pine logs, surmounted by two cross-cut saws, and on each arm of the cross was the head of an axe, the metal almost falling to pieces by the ravages of rust and decay. At each corner of the grave a Huon pine sapling had been planted by the mates of the dead man, and now were some seven to ten feet high. The inscription cut skilfully in the cross, read:—"John Stannard; drowned in Jane River, April 29, 1901; Aged 19 years". The story is that Stannard slipped while crossing the Jane River, on a log, and being laden with heavy pack and axe, sank and disappeared. His body was recovered some hours later.

Emerging from the forest after some hours walking, Boyd caught sight of a large tiger snake sunning itself on a clump of Button-grass. Disabling it with a stick, Fleming grasped it by the back of the head, and holding it carefully, allowed it to bite his handkerchief, which he had rolled into a rough ball. The venom spurted out in two swift, deadly streams. Part of it lodged in the handkerchief, but most of it struck the sleeve of his shirt, and in a few moments dried and crystalised there. The snake was pushed into the mud on the plain and left there with the end of its tail projecting.

Reaching the north-western end of the Button-grass plain, we penetrated a thicket of Melaleuca, in which game trails were plentiful, and emerged at a piner's cabin at the edge of the river, where we camped for two nights. Birds were more plentiful here than in any other part. At dusk I went to the edge of the plain and listened to the delightful song of the Field Wren (**Calamanthus**) a bird which was fairly common on the Button-grass, and one which appeared to reserve its singing till nightfall. It was pleasant to sit round the campfire at the end of the day and hear its musical notes wafted across the plain.

The morning after our arrival at this cabin we found the footprints of Thylacine in more than one part along the river banks, and there was evidence that one of the animals had come round the cabin during the night.

The next night we were camped in the shadow of East Peak, near the head of another plain, running up into an attractively wooded valley, about 4 miles from the "middle dump". We had come from the piner's cabin after several miles of gruelling walking. First we crossed the Jane River for the last time and climbed a ridge about 500 feet high, only to drop again to the river level and then climb 2,000 ft. up Flagstaff Hill through Calder Pass to the half-way hut. It was an arduous climb, mostly through Beech, Sassafras and ferns, with Waratah growing from 40 to 50 feet high, masses of Bauera, Laurel, and large tracts of Native Gorse. It was an unusually hot day, about 90 degrees in the shade, and bush fires on the plains and hills cast a deep smoke haze over the mountains. From the top of Calder Pass, through which Sir John and Lady Franklin passed on their

historic walk from Hobart to Macquarie Harbour 100 years before, we obtained an extensive view of peaks and ranges stretching away in the north—Mt. Gell, Mr. Arrowsmith, the peaks of the Du Cane Range, Gould's Sugarloaf, and many others the names of which we did not know. We were not far from the West Coast Road and should reach it in a day or two.

As we approached the road fewer became the tracks of game. We took our last plaster cast of a Thylacine's footprint on the Jane River at the piner's cabin, and although a few were seen again on the Loddon River on our return, they were not good enougn to make an impression. It was our intention to investigate some deep gorges at the foot of the Frenchman's Cap and perhaps to climb to the Cap the next day, but all idea of this was abandoned when rain and fog blotted the mountain completely from view. Instead of looking at the impressive wall of the mountain as we viewed it the previous night, we now saw nothing but a grey pall of cloud, which matched the sky and the rain-drenched ground, giving the impression that no mountain ever had existed. As food had become short, we resolved that we should try and reach the road that night.

Our packs by this time were considerably lighter and we made good time across the plain, wet and boggy as it was, and climbed the stiff Franklin Hill with but one short "breather" half way up, and emerged at the Jane River roadside depot in the afternoon. From here we returned next day to Hobart.

FAUNA BOARD'S PART.

The expedition was the third of its kind despatched by the Animals and Birds' Protection Board, in co-operation with the Police Department, to survey the position of the Thylacine in the western part of Tasmania. As already stated, one of these investigated the country watered by the Arthur River and its tributaries to the north-west of Zeehan; the second examined an extensive area amongst the Raglan Range on the north-western side of the Frenchman's Cap, not a great distance from the district which the third expedition traversed. It is probable that still another party will make a further investigation of the Arthur River country, as the first investigation was hampered by inclement weather. I was informed that the district on the southern side of Macquarie Harbour might also be examined, for reports have filtered through from prospectors and other who have had occasion to go into that remote district that game there is plentiful and at times Thylacines have been seen, not only in the timbered country on the low hills, but also on beaches both on Macquarie Harbour and the coast. This triangular-shaped strip of country, extending from Point Hibbs on the coast, and Birch's Inlet on Macquarie Harbour, to its apex at Cape Sorell, and composed of a series of hills and many small streams, is zoologically a terra incognita, and may yield some interesting features.

The conversations which I had with the chairman of the Animals and Birds' Protection Board, Col. Lord, and the secretary, Mr. E. P. Andrewartha, disclosed that the board was giving earnest consideration to the question of according the Thylacine full protection and safeguarding it from the threatened extinction. No longer a menace to sheep-owners since its isolation in the remote parts of the State, the animal possesses a unique scientific value which is appreciated by the Board. While, up to half a century ago, it was fairly plentiful in the grazing country of the central plateau, and was known also to inhabit parts of the eastern tiers and other mountain forest areas adjacent to settlement, it has now practically disappeared from these districts, to make its last stand in the western section of the State. In these distant solitudes, out of reach of most trappers, it could until a few years ago have been guaranteed to live undisturbed. There was little prospect of the region becoming accessible to more than a few hardy prospectors, whom one will always expect to find in the remote and inhospitable portions of the country. But in the last few years a great part of the Thylacine country has been penetrated by a road connecting Hobart, in the south, with Queenstown in the west. This has altered the position materially. Whilst most of the country traversed by this road never will be suitable for closer settlemen or agricultural development because of its mountainous nature and paucity of soil, the opening of the road has attracted a certain

number of people into this once inaccessible district largely in search of precious minerals, pine, hardwood and other natural products. When the game season is opened the road will permit trappers to reach areas that have not been hunted over. Thus, no doubt, will the Thylacine retreat still farther and be forced to share with others of its kind the game that is now scarcely sufficient to support the number already occupying outlying parts of this territory.

Some years ago the Government of Tasmania paid up to £1 a head for the Thylacine because of its inroads into settlers' flocks. When it was apparent that its numbers had diminished, that it was being driven steadily westward and exterminated in areas near settlement, and there was some fear that it might be lost to science altogether, regulations were introduced to give it partial protection. This may have discouraged the taking of animals out of season, but in the long run was found to fall short of requirements, for still further dimunition in its numbers was reported. So, soon after the establishment of the Board, there was instituted a stock-taking of the State's furred game, and as a result of recommendations made to the Minister controlling Fisheries and Game the Thylacine was placed on the wholly protected list of animals, and its export prohibited. The Board has since appointed a committee to devise further steps for its preservation, and it is hoped that the measures to be adopted will ensure the continuance of the animal's existence for many years to come.

Up to about 1935, the Thylacine was kept in captavity in the Hobart Zoo. Three pairs were on exhibition at one time, while additional animals were despatched by the zoo authorities to other countries for exchange purposes. Since then none has been seen in captivity. The Hobart Zoo was closed in 1937, but for time before this year unsuccessful efforts were made to obtain further specimens, and it might also be mentioned that in spite of substantial rewards offered, zoological gardens in other States likewise have failed to get them. The Birds and Animals' Protection Act makes provision for the Tasmanian Board to issue permits for the taking of any animals and birds for scientific and educational purposes; but the Board confines these permits to scientific and zoological societies after being satisfied as to the bona fides of any application. A close watch is maintained at ports to detect attempts to send away specimens of native fauna without authority, and, in addition, the Board has fallen into line with other States in adopting a uniform practice with regard to the issue of permits for the export of animals. In view of the comparative rareness of the Thylacine, it is doutful whether any permit would be issued for the taking of the animal from the State at the present time. Nor does the Board look with any particular favour on attempts that might be designed to capture the animal for a breeding experiment in special compounds. In any case, the work of trapping a sufficient number for this purpose, and the labour involved in transporting them from the place of capture, together with the creation and supervision of a breeding area, would it is claimed, involve a great deal of expense, which might not be justified by results, since experience has disclosed that the Thylacine does not take kindly to captivity, and rarely lives under such conditions for any length of time.

Colonel Lord informed me that it was the intention of the Board to recommend the Government to proclaim as a faunal sanctuary any one of the districts so far examined—the selection depending on police reports as to the prevalence of game—so that the animal might be permitted to live as far as possible in its natural state and undisturbed by trapping. The Board has accumulated considerable data about the distribution of Thylacine, and will also be guided by this as to the suitability of each area. To me it seemed that the remote areas, such as those situated between the Arthur and Savage Rivers, in the north-west, and beyond Macquarie Harbour, in the south-west, were already natural sanctuaries, and that a proclamation regarding either of them would have little beneficial effect upon the game there. They have no road access, and few trappers visit them. It is doubtful if they ever will be opened up, unless they produce rich mineral discoveries; but in this event the necessary measures could be taken coincident with any increase in habitation.

Sanctuaries are needed, firstly, in closely populated areas, and secondly in areas where native game is likely to be affected adversely by encroaching settlement. It would seem, therefore, that areas along,

and adjacent to, the West Coast Road offer the most natural choice. In time, the resident population along the road will increase. The mineral fields will continue to attract habitation on both sides of the road, but chiefly, on present indications, on the southern side. Trappers will find their way into new districts, and timber-getters each year will continue to tap the hardwood resources at a greater distance back from the road.

With its existing game supply, its unsuitability for agricultural development, and its natural boundaries of rivers and mountains, as already described, the district visited by the 1938 expedition, and the adjacent area comprising the Raglan and Collingwood Ranges and the north-western slopes of the Frenchman's Cap, consisting approximately of 300,000 acres, possess all the elements necessary for successful game conservation and might well be set aside as a permanent sanctuary for the preservation of the remnant of Tasmania's unique marsupial and other mammals. Scientific societies in Australia, as well as in other countries, will watch with a good deal of interest, the effect of measures which the Tasmanian Government may adopt to preserve the rarer examples of its fauna from extinction.

THE BLUE TONGUED LIZARD (TILIQUA SCINCOIDES).

By G. Longley.
(Illustrations from photographs by Miss Ella McFadyen)

During April, 1934, I obtained a specimen of this lizard about 19 inches in length and of a greyish colour. Unfortunately, the weather turned cold, and not knowing how to properly prepare him for hibernation, he died. One mistake was in trying to induce him to feed when the weather was cold. During July and August of the same year, I obtained two males and one female. These were the nucleus of my present collection, and are still alive.

Miss E. Bell with a 2-year-old Blue-tongued Lizard and a female blotched Blue-tongued Lizard.

January 21st, 1935.—I had given me a female 20 in. in length. I christened her "Helen".

February 9th and 10th, 1935.—Rained heavily, and Helen gave birth to 18 young ones, three (3) of which were still-born. These young averaged 4½ in. to 5 in., and were covered with broad transverse stripes of an olive greenish colour. They grew rapidly and fed freely upon small snails and slugs, also finely chopped raw meat, and raw egg, and even finely chopped cooked meat. They also lapped milk. They however refused to hibernate, and during June and July, 1935, several of them died with the cold. The remainder were placed in an indoor Vivarium under artificial heat. Three only survived, which I still have.

One of these, a female, mated with the smaller male purchased during August, 1935. The mating took place during October, 1936, and on 30th and 31st December, 1936, she gave birth to 10 young ones. These averaged 4½ in. in length, fed well on small snails finely chopped raw or cooked meat, raw eggs, milk, etc., but when winter arrived they refused to hibernate, and by 26th June, 1937, I had only six of

this brood alive. These six I brought indoors, and placed in an indoor Vivarium under artificial heat. One which had apparently caught cold, died, but the remaining five survived, and I still have them. Four of these have grown well, but one is rather backward and undersized. I also have both parents, the young lizards, and grandmother "Helen". I have a number of these lizards in my collection, none over 21 inches in length. I have not seen any longer example of this species. The colour varies but grey seems to predominate.

A well-stocked Vivarium of Pink-tongued Lizards.

Food consists chiefly of snails, also slugs, cicadas, beetles and their larvae, the larvae of lepidoptera, crickets, grasshoppers, etc., as well as the perfect insects. In captivity they will also eat finely chopped raw and cooked meat, and if mixed with a little raw egg, is greatly relished. They will also eat chopped bananas, apples, pears, plums, rock melons, or any fruit which is rather sweet, and will sometimes eat grapes. They lap milk readily and also gravy if not too salt.

Five young Pink-tongued Lizards.

Whilst these lizards are fond of eggs, I have never seen them crack a fowl's egg. I have repeatedly placed fowls' eggs in their enclosure, and they have remained untouched all day unless I have cracked the shell, and allowed the contents to exude.

I have never been able to induce them to feed on tainted meat, rotten fruit, or sour milk. Though I have handled numbers of these lizards I have never had one to attack me, and the only way to get one to bite me was to place my finger between its open jaws, when I would certainly receive a good pinch but nothing more serious. They

make most likeable pets, and will very soon come and take food quite readily from the hand.

Hibernation.—Around Sydney and the more temperate parts of Australia these lizards hibernate from the month of May until the end of August, the period varying according to the weather prevailing. During this period no food or drink is taken, and they sleep most of the time.

Adult male Blue-tongued Lizard, father of the two shown below.

There is a silly belief that if one is bitten by one of these reptiles a sore is the result which refuses to heal. Needless to say this is absolute nonsense. **(28th May, 1938).**

Further Notes on the Blue Tongued Lizard (Tiliqua scincoides).

After placing the surviving six young **Tiliqua scincoides** in an indoor Vivarium under artificial heat, one died on June 27th, 1937. Another which was rather undersized lived until October, 1938.

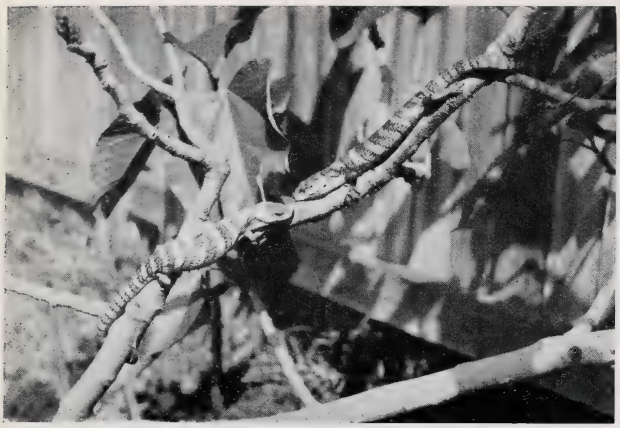
Brother and sister 2-year-old Blue-tongued Lizards bred in captivity.

This latter one never grew to more than 8½ in., was continually being attacked by the older males during the mating season, and was finally killed by them. The remaining four continued to make progress.

Of these four, one female mated with a male **Tiliqua nigrolutea,** early in October, 1938, and the young were born January 11th and 12th, 1939. Three of these I found to be hybrids, and this was later confirmed by Mr. J. R. Kinghorn, of the Australian Museum, Sydney. Unfortunately, the excessive heat which developed on January 14th, 1939, killed these, and I sent the specimens to the Australian Museum.

On October 3rd, 1939, a large male **Tiliqua scincoides** (which I have had since July, 1934) mated with a female of the same species, which I obtained December 10th, 1935 (being then only 8 in. to 9 in. in length). The brood of 14 young of this pair were born January 10th, 1939, but they also perished in the heat of January 14th, 1939.

The Vivarium in which these were, and also the brood mentioned above were placed under the shade of a Fig tree, but the foliage was



Young Pink-tongued Lizards showing prehensile nature of tail.

scorched off with the hot southerly wind blowing at the time, and the sun striking directly on to the enclosure killed the whole of the inmates.

17 Bronte St., Bronte. 10th June, 1939.

LIST OF MEMBERS.

As on August 8, 1939.

Note.—Unless otherwise specified, members are residents of the State of New South Wales.

Members will oblige by notifying the Honorary Secretary of any change of address.

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Royal Zoological Society of New South Wales

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